

AMENDMENT TO THE CLAIMS

Claims 1-47 (canceled)

Claim 48 (new): A biopsy device for taking tissue samples, comprising:

- a housing containing an electric power source and a tension slide connected to the power source, wherein the tension slide is brought into a cocked position against the action of a spring by the power source;
- a removable element configured for insertion into the housing, comprising:
 - a biopsy needle unit, comprising a hollow biopsy needle, having a sample removal chamber, and a cutting sheath, wherein the biopsy needle unit is arranged on the tension slide;
 - a vacuum pressure-generating device; and
 - a connection element connecting the biopsy needle unit and the vacuum pressure-generating device; and
- a control panel attached to the housing.

Claim 49 (new): The biopsy device according to claim 48, wherein the vacuum pressure-generating device comprises a syringe unit having a cylindrical housing and a plunger positioned in the housing, the housing having a ventilation opening in an upper part thereof which may be opened to dissipate a created vacuum by retraction of the plunger.

Claim 50 (new): The biopsy device according to claim 49, wherein the plunger is movable in a forward and a reverse direction by means of a controllable spindle actuator.

Claim 51 (new): The biopsy device according to claim 50, further comprising at least one DC motor with secondary planet gearing contained within the housing, wherein the controllable spindle actuator is powered by the motor.

Claim 52 (new): The biopsy device according to claim 51, wherein the transmission from the planet gearing to the spindle occurs via a single-stage gearing, and wherein a threaded spindle nut mounted on the syringe unit housing carries a toothed crown.

Claim 53 (new): The biopsy device according to claim 52, wherein the motor with secondary planet gearing is controlled by measuring the speed of revolution such that the plunger in a first step is moved from a distal end of the housing to a first point adjacent but distal the ventilation opening, in a second step is moved first proximal the ventilation opening to open the ventilation opening and dissipate the created vacuum and then distal back to the first point to close the ventilation opening, and in a third step is moved in a distal direction to create excess pressure, the first, second and third steps being coordinated with the controlling of the sample removal and the ejecting of the sample.

Claim 54 (new): The biopsy device according to claim 53, wherein the speed of revolution of the motor is measured by a photocell permanently arranged on a motor housing and a pickup arranged on a motor shaft.

Claim 55 (new): The biopsy device according to claim 54, wherein the speed of revolution of the motor is compared against a nominal value previously stored in electronic components of the biopsy device and used to trigger control of the spindle actuator.

Claim 56 (new): The biopsy device according to claim 49, wherein the plunger for generating a vacuum in the system and in the sample removal chamber is moved in a first step in a proximal direction from the housing distal end to a first point adjacent but distal the ventilation opening.

Claim 57 (new): The biopsy device according to claim 56, wherein in order to ventilate the system, the plunger in a second step is moved to a second point proximal the ventilation opening, and wherein after the vacuum is dissipated the plunger is moved back to the first point.

Claim 58 (new): The biopsy device according to claim 57, wherein the plunger in a third step is moved in a distal direction to create an excess pressure in the sample removal chamber.

Claim 59 (new): The biopsy device according to claim 48, wherein an inner space of the hollow biopsy needle is connected to an inner space of the vacuum pressure-generating device by the connection element such that an airtight connection is established.

Claim 60 (new): The biopsy device according to claim 59, wherein the connection piece comprises a flexible hose.

Claim 61 (new): The biopsy device according to claim 48, wherein the control panel is connected to a plurality of actuators, wherein a first actuator controls both the tension slide and the cutting sheath.

Claim 62 (new): The biopsy device according to claim 48, wherein the biopsy needle unit comprises recesses that are configured to receive brackets on the tension slide.

Claim 63 (new): The biopsy device according to claim 48, wherein the tension slide is placed in a cocked position by a spindle actuator driven by means of a DC gear motor with single-stage secondary transmission.

Claim 64 (new): The biopsy device according to claim 63, wherein the tension slide can be mechanically locked in the cocked position.

Claim 65 (new): The biopsy device according to claim 64, further comprising a double-arm lever, which can be adjusted about an axis under spring pressure, wherein a first arm is acted upon by a compression spring, and a second arm engages with a recess of the tension slide.

Claim 66 (new): The biopsy device according to claim 64, wherein a toothed roller is placed on a take-off shaft of a planet transmission connected to the DC gear motor, which engages with a gear of a spindle actuator connected to the cutting sheath.

Claim 67 (new): The biopsy device according to claim 66, wherein the gear of the spindle actuator thrusts against a holder of a base block during displacement of the tension slide.

Claim 68 (new): The biopsy device according to claim 52, wherein the cutting sheath is coaxially positioned around the biopsy needle.

Claim 69 (new): The biopsy device according to claim 68, wherein the biopsy needle with coaxial cutting sheath and other elements arranged thereon are held at two bearing points in the biopsy needle unit so that the biopsy needle and/or the cutting sheath can turn individually.

Claim 70 (new): The biopsy device according to claim 69, wherein the threaded spindle nut is press-fitted into the biopsy needle unit and forms one of the two bearing points.

Claim 71 (new): The biopsy device according to claim 49, wherein the syringe unit is designed such that a vacuum is generated in the sample removal chamber on the order of approximately 200 hph.

Claim 72 (new): The biopsy device according to claim 48, wherein the biopsy needle comprises a narrowing positioned in a lumen of the biopsy needle at a proximal end of the sample removal chamber, the narrowing being positioned at a top portion of the lumen, leaving a passage at a bottom portion of the lumen.

Claim 73 (new): The biopsy device according to claim 72, wherein the narrowing comprises 60-75% of the cross section of the lumen.

Claim 74 (new): The biopsy device according to claim 72, wherein the narrowing comprises a stopper having a length of approximately 10 mm.

Claim 75 (new): The biopsy device according to claim 25, wherein the narrowing is formed as a lip or dog protruding into the cross section of the lumen.

Claim 76 (new): The biopsy device according to claim 48, wherein an opening of the sample removal chamber comprises approximately 25% of the cross section of the biopsy needle.

Claim 77 (new): The biopsy device according to claim 48, wherein a miniature switch is integrated into an end cover of the housing, the activation of which enables the power source.

Claim 78 (new): The biopsy device according to claim 77, wherein a switch pin of the miniature switch is activated when a housing cover presses down the vacuum pressure-generating device.

Claim 79 (new): The biopsy device according to claim 48, wherein means are provided on the biopsy needle unit to prevent closing of a housing cover when the tension slide is cocked and the biopsy needle unit is installed.

Claim 80 (new): The biopsy device according to claim 48, wherein surfaces are provided on the housing for attaching the biopsy device to a positioning mechanism.

Claim 81 (new): The biopsy device according to claim 48, wherein an upper outer contour of the biopsy needle unit corresponds to an inner contour of the housing.

Claim 82 (new): The biopsy device according to claim 48, wherein a plastic part with knurled disk is mounted by friction locking onto a proximal end of the biopsy needle.

Claim 83 (new): The biopsy device according to claim 82, wherein the plastic part comprises a polygon, which interacts with the biopsy needle unit and which, when turned by means of the knurled disk, locks the biopsy needle and thus the sample removal chamber in the selected position in the biopsy needle unit.

Claim 84 (new): The biopsy device according to claim 48, wherein a base block is positioned in the center of the housing to support and hold components of the biopsy device.

Claim 85 (new): The biopsy device according to claim 84, wherein space for a gear motor is separated by a cover connected to the base block.

Claim 86 (new): The biopsy device according to claim 84, wherein space for the power source is separated by a separation plate connected to the base block.

Claim 87 (new): The biopsy device according to claim 48, wherein the control panel comprises functional displays and operating switches for electronic components of the biopsy device.

Claim 88 (new): The biopsy device according to claim 48, wherein the connection element is connected to the biopsy needle by a first plastic part which is able to rotate with respect to the connection element.

Claim 89 (new): The biopsy device according to claim 88, further comprising a second plastic part that is sealed off against the first plastic part by means of an O-ring.

Claim 90 (new): The biopsy device according to claim 48, wherein the removable element is a sterile packaged unit.

Claim 91 (new): The biopsy device according to claim 48, further comprising an insert aid having brackets, a cross-piece and a pin, wherein the biopsy needle unit and the vacuum pressure-generating device are embraced by the brackets, and wherein the pin and the cross-piece orient the biopsy needle unit and the vacuum pressure-generating device along a longitudinal axis of the biopsy device.

Claim 92 (new): The biopsy device according to claim 90, wherein the insert aid further comprises two holder pieces on an upper side thereof.

Claim 93 (new): The biopsy device according to claim 48, wherein the cutting sheath is moved approximately 2 mm beyond the distal end of the sample removal chamber in the direction of a tip of the biopsy needle when cutting the tissue sample.

Claim 94 (new): The biopsy device according to claim 48, wherein when using a coaxial cannula for the positioning of the biopsy device, a seal is provided at the proximal end of the coaxial cannula, preventing the vacuum from dissipating when the biopsy needle is introduced into the coaxial cannula.

Claim 95 (new): The biopsy device according to claim 94, wherein one or more spacing pieces are inserted between a proximal bearing surface of the coaxial cannula and a distal end surface of a guide ring.